

FIGURE 1

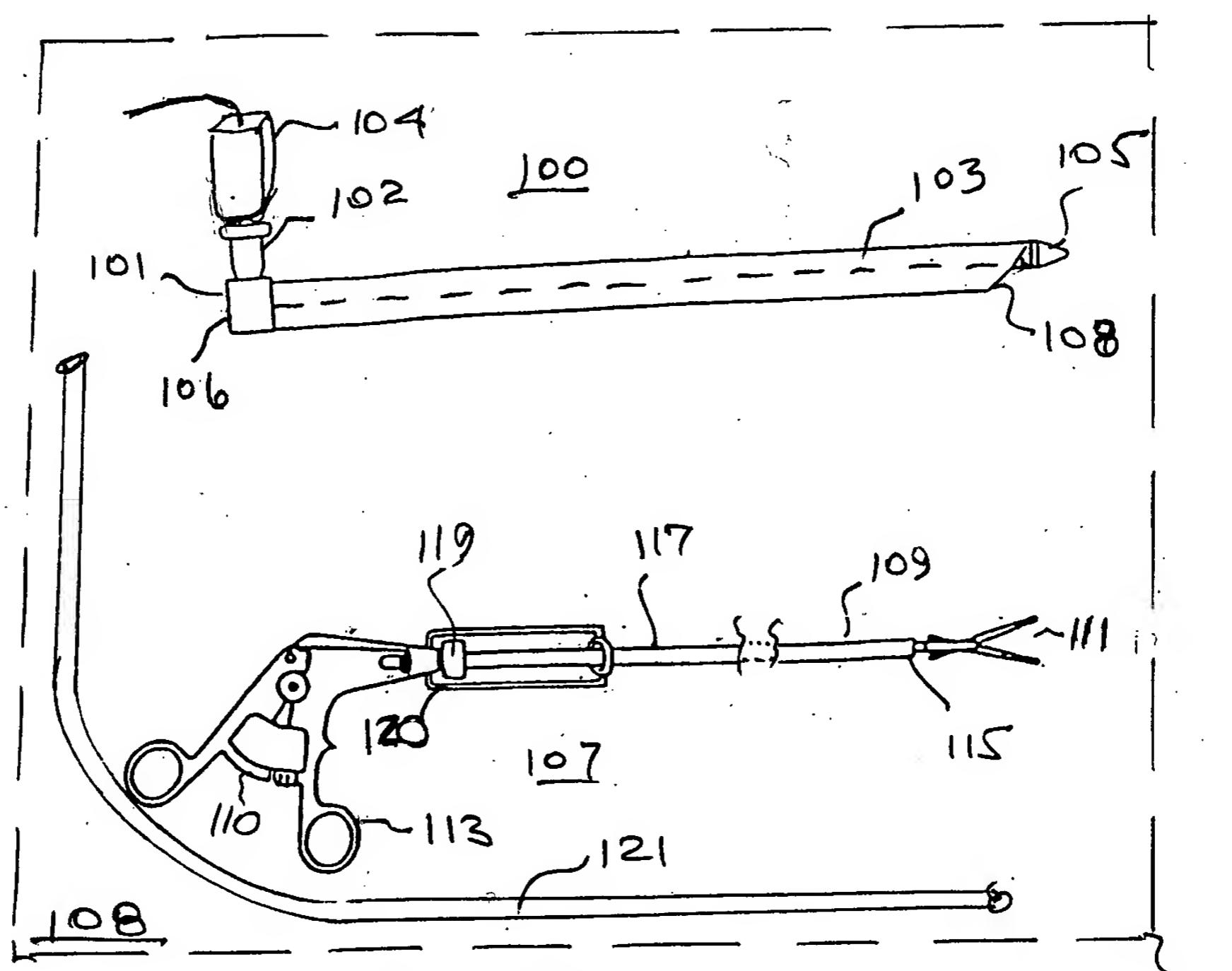


FIGURE 4

PERFORM SUBXIPHOID SKIN INCISION ~ 17

BLUNTLY DISSECT TO EXPOSE LINEA ALBA ~ 19

INCISE THE LINEA ALBA ~ 21

INSERT FINGER TO FORM TRACT TO UNDERSIDE OF XIPHOID PROCESS AND STERNUM ~ 23

INSERT ENDOSCOPIC SUBXIPHOID CANNULA ~ 25 IN SUBXIPHOID INCISION

ADVANCE CANNULA THROUGH DIAPHRAGM TO THE ANTERIOR SURFACE OF THE PERICARDIUM ~ 27

BLUNTLY DISSECT FAT FROM ANTERIOR SURFACE OF PERICARDIUM ~ 29

INSERT PERICARDIAL ENTRY INSTRUMENT THROUGH WORKING CHANNEL OF THE ENDOSCOPIC CANNULA ~ 31

GRASP PERICARDIUM NEAR APEX OF THE HEART; UNLOCK, ADVANCE AND ROTATE CIRCULAR CUTTER TO ENTER PERICARDIUM ~ 33

ADVANCE ENDOSCOPIC CANNULA TO ENTRY OF THE TRANSVERSE PERICARDIAL SINUS ~ 35

REMOVE PERICARDIAL ENTRY INSTRUMENT AND INSERT PROBE OR SHEATH INTO WORKING CHANNEL ~ 37 OF THE ENDOSCOPIC CANNULA

↓ TO FIG. 2b

FIGURE 2a

From FIG. 2a

ADVANCE PROBE OR SHEATH TO THE END OF THE TRANSVERSE PERICARDIAL SINUS ~ 39

REMOVE ENDOSCOPIC CANNULA FROM BODY, LEAVING PROBE OR SHEATH IN PLACE IN TRANSVERSE PERICARDIAL SINUS ~ 41

REINSERT ENDOSCOPIC CANNULA ALONGSIDE THE PROBE OR SHEATH; AND INSERT PERICARDIAL ENTRY INSTRUMENT IN WORKING CHANNEL ~ 43

GRASP PERICARDIAL REFLECTION ON FLOOR OF THE TRANSVERSE PERICARDIAL SINUS ~ 45

ENTER INTO TRANSVERSE PERICARDIAL SINUS ~ 47

RETRACT PROBE OR SHEATH PARTIALLY OUT OF TRANSVERSE PERICARDIAL SINUS ~ 49

GRASP PERICARDIAL REFLECTION AT END OF TRANSVERSE SINUS ~ 51

CREATE AN OPENING IN PERICARDIAL REFLECTION AT END OF TRANSVERSE SINUS ~ 53

GRASP PROBE OR SHEATH WITH PERICARDIAL ENTRY INSTRUMENT AND ADVANCE THROUGH OPENING IN PERICARDIAL REFLECTION AT END OF TRANSVERSE SINUS ~ 55

MOVE ENDOSCOPIC CANNULA TO THE OBLIQUE PERICARDIAL SINUS ~ 57

FIGURE 2b

To FIG. 2c

FROM FIG. 26

GRASP PERICARDIAL REFLECTION  
BETWEEN INFERIOR VENA CAVA  
AND RIGHT INFERIOR PULMONARY VEIN  
WITH PERICARDIAL ENTRY  
INSTRUMENT

~ 59

CREATE AN OPENING IN  
PERICARDIAL REFLECTION  
BETWEEN INFERIOR VENA CAVA  
AND RIGHT INFERIOR  
PULMONARY VEIN

~ 61

INSERT ENDOSCOPIC CANNULA  
THROUGH OPENING IN  
PERICARDIAL REFLECTION AND  
GRASP PROBE OR SHEATH

~ 63

PULL PROBE OR SHEATH  
THROUGH OPENING IN  
PERICARDIAL REFLECTION  
INTO OBLIQUE PERICARDIAL  
SINUS

~ 65

HOLD PROBE OR SHEATH  
WITH GRASPER IN OBLIQUE  
PERICARDIAL SINUS TO FORM  
A LOOP ENCIRCLING THE FOUR  
PULMONARY VEINS

~ 67

IF SHEATH USED, ADVANCE  
PROBE THROUGH SHEATH

~ 68

APPLY POWER TO PROBE  
TO ABLATE ATRIAL TISSUE  
AROUND THE PULMONARY VEINS

~ 69

Figure 2C

PERFORM A 1.5-2.0 CM SUBCOSTAL INCISION ~ 71

DISSECT BLUNTLY TO EXPOSE ANTERIOR RECTUS SHEATH ~ 73

PERFORM A 1.5-2.0 CM INCISION IN THE ANTERIOR RECTUS SHEATH ~ 75

SPREAD RECTUS MUSCLE TO EXPOSE THE POSTERIOR RECTUS SHEATH ~ 77

PERFORM A 1.5-2.0 CM INCISION IN THE POSTERIOR RECTUS SHEATH ~ 79

INSERT FINGER IN INCISION IN POSTERIOR RECTUS SHEATH TO FORM A TRACT TO THE INFERIOR BORDER OF THE COSTAL MARGIN ~ 81

INSERT ENDOSCOPIC CANNULA INTO TRACT ~ 83

ADVANCE ENDOSCOPIC CANNULA THROUGH MUSCULAR DIAPHRAGM INTO PLEURAL CAVITY ~ 85

INSERT PERICARDIAL ENTRY INSTRUMENT INTO WORKING CHANNEL OF THE ENDOSCOPIC CANNULA ~ 87

GRASP THE PLEURA OVERLYING THE APEX OF THE HEART WITH THE PERICARDIAL ENTRY INSTRUMENT ~ 89

FIGURE 3a

† TO FIG. 3b

Title: Apparatus and Method for Endoscopic  
Encirclement of Pulmonary Veins for Epicardial Ablation  
Applicants: Albert K. Chin  
Docket No.: 23488-07931

↓ FROM FIG. 3a

CREATE AN OPENING  
THROUGH THE PLEURA ~ 90

GRASP THE PERICARDIUM  
OVERLYING THE APEX  
OF THE HEART ~ 91  
WITH THE PERICARDIAL  
ENTRY INSTRUMENT

CREATE AN OPENING  
THROUGH THE  
PERICARDIUM ~ 93

INSERT THE ENDOSCOPIC  
CANNULA THROUGH THE  
OPENING TO ACCESS  
THE HEART ~ 95

Figure 3 b